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Andrew H. Barr

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EXAMINER

PATEL, NITIN C

ART UNIT

PAPER NUMBER

2116

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/646,079		BARR ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Nitin C. Patel		2116	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/29/04, 1/30/6</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This is in responsive to application filed on 22 August 2003.
2. Claims 1 – 54 are presented for the examination.

#### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 29 December 2004, and 30 January 2006 were filed before the mailing date of the first office action. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Drawings***

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: The decisive steps reference numerals 810 and 812 in fig. 8 are not matching with the specification description in lines 17 – 20 on page 16. This can be corrected by either by correcting only specification as suggested under specification objection or correcting both drawing and specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

5. The disclosure is objected to because of the following informalities: The decisive steps reference numerals 810 and 812 in fig. 8 are not matching with the specification description in lines 17 – 20 on page 16. In the specification described as, "At 806, information about the application program is obtained. At 808, if the application program is memory intensive, control passes to 810; otherwise control passes to 812", which contradicts with steps 808 – 812 of figure 8. In the drawing fig. 8, steps 808 – 812 represents the control passes to 812 if memory intensive otherwise control passes 810.

6. In the specification:

7. On page 16, line 18, replace "810" with ---812---following the words " memory intensive, control passes to".

8. On page 16, line 18, replace "812" with ---810---following the words " otherwise control passes to".

9. On page 1, under heading "Related applications" the application serial numbers are requested.

10. On page 1, lines 8 – 11, under "Related Applications" applicant naming three inventors which, is conflicting with the record having only two inventors namely, Andrew H. Barr, Ricardo Espinoza-Ibarra. Kevin Somervill's name is not on record in the application [s/n 10/646,078, attorney docket number 200206932-1] entitled CIBUS

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CLOCK FREQUENCY MANAGEMENT BASED ON CHARACTERISTICS OF AN APPLICATION PROGRAM' [s/n 10/646,078, attorney docket number 200206932-1].

Appropriate correction is required.

***Claim Objections***

11. Claims 10, 23, 37, and 50 are objected to because of the following informalities:

12. Claims 10, 23, 37, and 50, recites the limitation "DIP switch" on line 1, of pages 21, 23, 24, and 26 respectively. The abbreviation of term "DIP switch" is required or defined at least once in claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claims 1 – 15, and 28 – 42 are rejected under 35 U.S.C. 101 because:

14. The language of the claim 1, "automatically selecting a clock frequency for the electronic device based at least on information about the electronic device and the zero or more other electronic devices installed in the system" raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

15. The language of the claim 15, "automatically selecting a clock frequency for the electronic device based at least on information about the electronic device and the zero

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or more other electronic devices installed in the system” raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

16. The language of the claim 28, “automatically selecting a clock frequency for both the first and second electronic device, based at least on information about the first and second electronic devices and the zero or more other electronic devices installed in the system” raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

17. The language of the claim 42, “automatically selecting a clock frequency for both the first and second electronic devices based at least on information about the first and second electronic devices and the zero or more other electronic devices installed in the system, and an interface connected to the frequency calculator and to a first clock signal generator and a second clock signal generator, the interface sending commands to the first and second clock signal generators to generate clock signals at the clock frequency selected by the frequency calculator” raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a

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concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

18. The dependent claims 2 – 14 dependent on independent claim 1, raise a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which, would result in a practical application producing a concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

19. The dependent claims 29 – 41 dependent on independent claim 28, raise a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which, would result in a practical application producing a concrete, useful, and tangible results to form the basis of statutory subject matter under 35 U.S.C. 101.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20. Claims 1 – 54 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 31, and 1 - 40 of copending Applications No. 10/646099 [publication no. US 2005/0044442 A1], and 10/646078 [publication no. US 2005/0044440 A1] respectively. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

21. The independent claim 1 of current application, for method of determining a clock frequency for an electronic device installed with zero or more other electronic devices, comprising automatically selecting a clock frequency based at least on information about the electronic device and the zero or more other electronic devices installed in the system is almost identical to claim 1 of pending application 10/646099 and claims 1, and 4 of pending application 10/646078 respectively.

22. The independent claim 15 of current application, an article of manufacturer comprising, a computer readable medium for storing instructions capable of determining a clock frequency for an electronic device installed with zero or more other electronic devices, comprising automatically selecting a clock frequency based at least on information about the electronic device and the zero or more other electronic devices installed in the system is almost identical to claim 17 of pending application 10/646099.

23. The independent claim 16 of current application, a frequency manager for determining a clock frequency for an electronic device installed with zero or more other electronic devices, including frequency calculator automatically selecting a clock

frequency based at least on information about the electronic device and the zero or more other electronic devices installed in the system; and an interface connected to the frequency calculator and to a clock signal generator, the interface sending commands to the clock signal generator to generate clock signals at the clock frequency selected by the frequency calculator is almost identical to claim 18 of pending application 10/646099 and claims 23, and 24 of pending application 10/646078.

24. The independent claim 28 of current application, a method of determining a clock frequency for a first and a second electronic device installed in a system with zero or more other electronic devices, the first electronic device being connected to a first bus and the second electronic device being connected to a second bus, comprising: automatically selecting a clock frequency for both the first and second electronic devices based at least on information about the first and second electronic devices and the zero or more other electronic devices installed in the system is almost identical to claim 1 of pending application 10/646099 and claims 1, and 4 of pending application 10/646078.

25. The independent claim 42 of current application, an article of manufacturer comprising, a computer readable medium for storing instructions capable of determining a clock frequency for a computer readable medium for storing instructions capable of determining a clock frequency for first and second electronic device installed in a system with zero or more other electronic devices, the first electronic device being connected to a first bus and the second electronic device being connected to second bus, comprising automatically selecting a clock frequency for both the first and second

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electronic devices based at least on devices installed information and supplying to first and second device respectively is almost identical to claim 22 of pending application 10/646078 and claim 17, of pending application 10/646099.

26. The independent claim 43 of current application, a frequency manager for determining a clock frequency for a first and a second electronic device installed in a system with zero or more other electronic devices, the first electronic device being connected to a first bus and the second electronic device being connected to a second bus, comprising: a frequency calculator automatically selecting a clock frequency for both the first and second electronic devices based at least on information about the first and second electronic devices and the zero or more other electronic devices installed in the system; and, an interface connected to the frequency calculator and to a first clock signal generator and a second clock signal generator, the interface sending commands to the first and second clock signal generators to generate clock signals at the clock frequency selected by the frequency calculator is almost identical to claim 18 of pending application 10/646099 and claims 23, and 24 of pending application 10/646078.

27. The dependent claim 2 of the current application including supplying a clock signal having the automatically selected clock frequency to the electronic device is almost similar to claims 2, of pending application 10/646099 and 2, of pending application 10646078 respectively.

28. The dependent claim 3 of the current application including the electronic device is connected to a bus, and further comprising supplying a clock signal having the

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automatically selected clock frequency to the bus is almost similar to claims 3, of pending application 10/646099 and 3, of pending application 10646078 respectively.

29. The dependent claim 4 of the current application including the information about the electronic device and the zero or more other electronic devices comprises a number of the other electronic devices installed in the system is almost similar to claims 6, of pending application 10/646099 and 12, of pending application 10646078 respectively.

30. The dependent claim 5 of the current application including the automatically selecting a clock frequency is further based on a thermal budget for the system is exactly similar to claims 7, of pending application 10/646099 and 12, of pending application 10646078 respectively.

31. The dependent claim 6 of the current application including the automatically selecting a clock frequency is further based on a power consumption budget for the system is exactly similar to claims 8, of pending application 10/646099 and 13, of pending application 10646078 respectively.

32. The dependent claim 7 of the current application including automatically ascertaining at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 9, of pending application 10/646099 and 14, of pending application 10646078 respectively.

33. The dependent claim 8 of the current application including the automatically ascertaining at least some of the information comprises: querying at least one of the electronic device and the zero or more other electronic devices; and in response to the querying, receiving information from at least one of the electronic device and the zero or

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more other electronic devices is exactly similar to claims 10, of pending application 10/646099 and 15, of pending application 10646078 respectively.

34. The dependent claim 9 of the current application including the automatically ascertaining at least some of the information comprises reading at least a portion of a memory is exactly similar to claims 11, of pending application 10/646099 and 16, of pending application 10646078 respectively.

35. The dependent claim 10 of the current application including the memory comprises a DIP switch exactly similar to claims 12, of pending application 10/646099 and 17, of pending application 10646078 respectively.

36. The dependent claim 11 of the current application including the ascertaining at least some of the information about the electronic device and the zero or more other electronic devices installed in the system through a user interface is exactly similar to claims 13, of pending application 10/646099 and 18, of pending application 10646078 respectively.

37. The dependent claim 12 of the current application including the information about the electronic device and the zero or more other electronic devices comprises information about an amount of heat at least one of the electronic device and the zero or more other electronic devices would generate in relation to a clock frequency at which the corresponding at least one of the electronic device and the zero or more other electronic devices would operate is exactly similar to claims 14, of pending application 10/646099 and 19, of pending application 10646078 respectively.

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38. The dependent claim 13 of the current application including the electronic device is removably installed in an expansion slot is exactly similar to claims 15, of pending application 10/646099 and 20, of pending application 10646078 respectively.

39. The dependent claim 14 of the current application including at least one of the zero or more other electronic devices is removably installed in an expansion slot is exactly similar to claims 16, of pending application 10/646099 and 21, of pending application 10646078 respectively.

40. The dependent claim 17 of the current application including frequency manager, the information about the electronic device and the zero or more other electronic devices comprises a number of the other electronic devices installed in the system is exactly similar to claims 21, of pending application 10/646099 and 30, of pending application 10646078 respectively.

41. The dependent claim 18 of the current application including frequency manager, the frequency calculator further bases the automatically selecting a clock frequency on a thermal budget for the system is exactly similar to claims 22, of pending application 10/646099 and 31, of pending application 10646078 respectively.

42. The dependent claim 19 of the current application including frequency manager, the frequency calculator further bases the automatically selecting a clock frequency on a power consumption budget for the system is exactly similar to claims 23, of pending application 10/646099 and 32, of pending application 10646078 respectively.

43. The dependent claim 20 of the current application including frequency manager, an information input automatically ascertaining at least some of the information about

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the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 24, of pending application 10/646099 and 33, of pending application 10646078 respectively.

44. The dependent claim 21 of the current application including frequency manager, the information input queries at least one of the electronic devices to ascertain the at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 25, of pending application 10/646099 and 34, of pending application 10646078 respectively.

45. The dependent claim 22 of the current application including frequency manager comprising a memory storing at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 26, of pending application 10/646099 and 35, of pending application 10646078 respectively.

46. The dependent claim 22 of the current application including frequency manager, the memory comprises a DIP switch is exactly similar to claims 27, of pending application 10/646099 and 36, of pending application 10646078 respectively.

47. The dependent claim 23 of the current application including frequency manager, a user interface, by which the frequency manager can ascertain at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 27, of pending application 10/646099 and 36, of pending application 10646078 respectively.

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48. The dependent claim 24 of the current application including frequency manager, a user interface, by which the frequency manager can ascertain at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 28, of pending application 10/646099 and 37, of pending application 10646078 respectively.

49. The dependent claim 25 of the current application including frequency manager, the information about the electronic device and the zero or more other electronic devices comprises information about an amount of heat at least one of the electronic device and the zero or more other electronic devices would generate in relation to a clock frequency at which the corresponding at least one of the electronic device and the zero or more other electronic devices would operate is exactly similar to claims 29, of pending application 10/646099 and 38, of pending application 10646078 respectively.

50. The dependent claim 26 of the current application including frequency manager, the electronic device is removably installed in an expansion slot is exactly similar to claims 30, of pending application 10/646099 and 39, of pending application 10646078 respectively.

51. The dependent claim 27 of the current application including frequency manager, at least one of the zero or more other electronic devices is removably installed in an expansion slot is exactly similar to claims 31, of pending application 10/646099 and 40, of pending application 10646078 respectively.

52. The dependent claim 29 of the current application including supplying a clock signal having the automatically selected clock frequency to the electronic device is

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almost similar to claims 2, of pending application 10/646099 and 2, of pending application 10646078 respectively.

53. The dependent claim 30 of the current application including the electronic device is connected to a bus, and further comprising supplying a clock signal having the automatically selected clock frequency to the bus is almost similar to claims 3, of pending application 10/646099 and 3, of pending application 10646078 respectively.

54. The dependent claim 31 of the current application including the information about the electronic device and the zero or more other electronic devices comprises a number of the other electronic devices installed in the system is almost similar to claims 6, of pending application 10/646099 and 12, of pending application 10646078 respectively.

55. The dependent claim 32 of the current application including the automatically selecting a clock frequency is further based on a thermal budget for the system is exactly similar to claims 7, of pending application 10/646099 and 12, of pending application 10646078 respectively.

56. The dependent claim 33 of the current application including the automatically selecting a clock frequency is further based on a power consumption budget for the system is exactly similar to claims 8, of pending application 10/646099 and 13, of pending application 10646078 respectively.

57. The dependent claim 34 of the current application including automatically ascertaining at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 9, of pending application 10/646099 and 14, of pending application 10646078 respectively.

58. The dependent claim 35 of the current application including the automatically ascertaining at least some of the information comprises: querying at least one of the electronic device and the zero or more other electronic devices; and in response to the querying, receiving information from at least one of the electronic device and the zero or more other electronic devices is exactly similar to claims 10, of pending application 10/646099 and 15, of pending application 10646078 respectively.

59. The dependent claim 36 of the current application including the automatically ascertaining at least some of the information comprises reading at least a portion of a memory is exactly similar to claims 11, of pending application 10/646099 and 16, of pending application 10646078 respectively.

60. The dependent claim 37 of the current application including the memory comprises a DIP switch exactly similar to claims 12, of pending application 10/646099 and 17, of pending application 10646078 respectively.

61. The dependent claim 38 of the current application including the ascertaining at least some of the information about the electronic device and the zero or more other electronic devices installed in the system through a user interface is exactly similar to claims 13, of pending application 10/646099 and 18, of pending application 10646078 respectively.

62. The dependent claim 39 of the current application including the information about the electronic device and the zero or more other electronic devices comprises information about an amount of heat at least one of the electronic device and the zero or more other electronic devices would generate in relation to a clock frequency at

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which the corresponding at least one of the electronic device and the zero or more other electronic devices would operate is exactly similar to claims 14, of pending application 10/646099 and 19, of pending application 10646078 respectively.

63. The dependent claim 40 of the current application including the electronic device is removably installed in an expansion slot is exactly similar to claims 15, of pending application 10/646099 and 20, of pending application 10646078 respectively.

64. The dependent claim 41 of the current application including at least one of the zero or more other electronic devices is removably installed in an expansion slot is exactly similar to claims 16, of pending application 10/646099 and 21, of pending application 10646078 respectively.

65. The dependent claim 44 of the current application including frequency manager, the information about the electronic device and the zero or more other electronic devices comprises a number of the other electronic devices installed in the system is exactly similar to claims 21, of pending application 10/646099 and 30, of pending application 10646078 respectively.

66. The dependent claim 45 of the current application including frequency manager, the frequency calculator further bases the automatically selecting a clock frequency on a thermal budget for the system is exactly similar to claims 22, of pending application 10/646099 and 31, of pending application 10646078 respectively.

67. The dependent claim 46 of the current application including frequency manager, the frequency calculator further bases the automatically selecting a clock frequency on

a power consumption budget for the system is exactly similar to claims 23, of pending application 10/646099 and 32, of pending application 10646078 respectively.

68. The dependent claim 47 of the current application including frequency manager, an information input automatically ascertaining at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 24, of pending application 10/646099 and 33, of pending application 10646078 respectively.

69. The dependent claim 48 of the current application including frequency manager, the information input queries at least one of the electronic devices to ascertain the at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 25, of pending application 10/646099 and 34, of pending application 10646078 respectively.

70. The dependent claim 49 of the current application including frequency manager comprising a memory storing at least some of the information about the electronic device and the zero or more other electronic devices installed in the system is exactly similar to claims 26, of pending application 10/646099 and 35, of pending application 10646078 respectively.

71. The dependent claim 50 of the current application including frequency manager, the memory comprises a DIP switch is exactly similar to claims 27, of pending application 10/646099 and 36, of pending application 10646078 respectively.

72. The dependent claim 51 of the current application including frequency manager, a user interface, by which the frequency manager can ascertain at least some of the

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information about the electronic device and the zero or more other electronic devices installed in the system is almost similar to claims 28, of pending application 10/646099 and 37, of pending application 10646078 respectively.

73. The dependent claim 52 of the current application including frequency manager, the information about the electronic device and the zero or more other electronic devices comprises information about an amount of heat at least one of the electronic device and the zero or more other electronic devices would generate in relation to a clock frequency at which the corresponding at least one of the electronic device and the zero or more other electronic devices would operate is exactly similar to claims 29, of pending application 10/646099 and 38, of pending application 10646078 respectively.

74. The dependent claim 53 of the current application including frequency manager, the electronic device is removably installed in an expansion slot is exactly similar to claims 30, of pending application 10/646099 and 39, of pending application 10646078 respectively.

75. The dependent claim 54 of the current application including frequency manager, at least one of the zero or more other electronic devices is removably installed in an expansion slot is exactly similar to claims 31, of pending application 10/646099 and 40, of pending application 10646078 respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

3A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

76. Claims 1 – 4, 7 – 11, 13 – 17, 21 – 24, 26 – 31, 34 – 38, 40 – 44, 47 – 51, and 53 - 54 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Olson et al.

[hereinafter as Olson], US Patent 6,484,222 B1 [cited by applicant in IDS].

77. As to claim 1, Olson discloses a method of determining clock frequency [PCI bus clock frequency] for an electronic device [PCI device] installed in a system [expansion slot # 1] with zero or more other electronic devices [PCI devices in expansion slots # 2-4, fig. 2] the method comprising:

a. automatically selecting a clock frequency [33/66 MHZ] for electronic device based at least on information [number of device present and device capability] about the electronic devices [PCI device] installed in a system [expansion slot # 1] and the zero or more other electronic devices [PCI devices in expansion slots # 2-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

78. As to claim 15, Olson discloses an article of manufacture [computer system, col. 4, lines 23 – 24], comprising:

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a. a computer-readable medium [14, system memory, fig. 1] storing computer-executable instructions [computer program/software/firmware/code] capable of determining clock frequencies [by sampling state of each of PRSNT and 66MHZ enable lines] for an electronic device [PCI] installed in a system [expansion slot # 1] with zero or more other electronic devices [PCI devices in expansion slots # 2-4] installed in the system [computer system, fig. 2], comprising:

b. automatically selecting a clock frequency [33/66 MHZ] for electronic device based at least on information [number of device present and device capability] about the electronic devices [PCI device] installed in a system [expansion slot # 1] and the zero or more other electronic devices [PCI devices in expansion slots # 2-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

79. As to claim 16, Olson discloses a frequency manager [75, bus bridge] for determining a clock [PCI clock] frequency for an electronic device [PCI device] installed in a system [expansion slot #1] with zero or more other electronic devices [PCI devices in expansion slots # 2-4], comprising:

a. a frequency calculator [100 expansion slot controller] automatically selecting a clock [PCI clock] frequency for the electronic device based at least on information [number of device present and device capability] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices installed [PCI devices in expansion slots # 2-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53]; and

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b. an interface connected [as shown in fig. 2] to the frequency calculator [100] and to a clock signal generator [77, clock driver][col. 4, lines 23 – 37, 60 – 65], the interface sending commands [by enabling/disabling 66MHz enable line] to the clock signal generator [77] to generate clock signals [PCI Clock] at the clock frequency [33/66 MHz] selected by the frequency calculator [100][col. 3, 43 – 62, col. 5, lines 1 – 26].

80. As to claim 28, Olson discloses a method of determining a clock frequency [PCI bus clock frequency] for a first [PCI device in expansion slot #1] and a second [PCI device in slot #2] electronic [PCI] device installed in a system [computer] with zero or more other electronic devices [PCI devices in expansion slots # 3-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53], the first electronic device being connected to a first bus [expansion bus connected to slot 70] and the second electronic device being connected to a second bus [expansion bus connected to slot 80][FIG. 2, comprising:

a. automatically selecting a clock frequency [33/66 MHZ] for both the first and second electronic devices [PCI devices in slot # 1 and 2] based at least on information [number of device present and device capability] about the first and second electronic devices [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in expansion slots # 3-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

81. As to claim 42, Olson discloses an article of manufacture [computer system, col. 4, lines 23 – 24], comprising:

a. a computer-readable medium [14, system memory, fig. 1] storing computer-executable instructions [computer program/software/firmware/code] capable of determining clock frequencies [by sampling state of each of PRSNT and 66MHZ enable lines] for a first [PCI device in expansion slot #1] and a second [PCI device in slot #1] electronic [PCI] device installed in a system [computer] with zero or more other electronic devices [PCI devices in expansion slots # 3-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53], the first electronic device being connected to a first bus [expansion bus connected to slot 70] and the second electronic device being connected to a second bus [expansion bus connected to slot 80][FIG. 2, comprising:

b. automatically selecting a clock frequency [33/66 MHZ] for both the first and second electronic devices [PCI devices in slot # 1 and 2] based at least on information [number of device present and device capability] about the first and second electronic devices [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in expansion slots # 3-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

82. As to claim 43, Olson discloses a frequency manager [75, bus bridge] for determining a clock [PCI clock] frequency for a first [PCI device in expansion slot #1] and a second [PCI device in slot #2] electronic [PCI] device installed in a system [computer] with zero or more other electronic devices [PCI devices in expansion slots # 3-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53], the first electronic device [PCI device in expansion slot #1] being connected to a first bus

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[expansion bus connected to slot 70] and the second electronic device [PCI device in expansion slot #2] being connected to a second bus [expansion bus connected to slot 80][FIG. 2], comprising:

a. a frequency calculator [100 expansion slot controller] automatically selecting a clock frequency [33/66 MHz] for both the first and second electronic devices [PCI devices in slot # 1 and 2] based at least on information [number of device present and device capability] about the first and second electronic devices [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in expansion slots # 3-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3]; and

b. an interface connected [as shown in fig. 2] to the frequency calculator [100] and to a first clock signal generator [77, clock driver with 33 MHz] and second clock signal generator [77, clock driver with 66 MHz][col. 4, lines 23 – 37, 60 – 65], the interface sending commands [by enabling/disabling 66MHz enable line] to the first and second clock signal generator [77] to generate clock signals [PCI Clock] at the clock frequency [33/66 MHz] selected by the frequency calculator [100][col. 3, 43 – 62, col. 5, lines 1 – 67, col. 6, lines 1 – 23, fig. 2 – 3].

83. As to claim 2, Olson teaches supplying a clock signal [PCI CLOCK] having the automatically selected clock frequency [33/66 MHz] to the electronic device [PCI device in expansion slot] [col. fig.2].

84. As to claim 3, Olson teaches the electronic device [PCI device in expansion slot #1 – 4] connected to bus [85 PCI bus, fig. 2] including supplying a clock signal [PCI

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CLOCK] having the automatically selected clock frequency [33/66 MHz] to the bus [as shown in fig. 2].

85. As to claim 4, Olson teaches that the information [number of device present and device capability] about the electronic device [PCI device in slot # 1] and the zero or more other electronic devices [PCI devices in slot # 2 – 4] comprises a number of the other electronic devices [number of devices] installed [present] in the system [col. 3, lines 22 – 35, fig. 2].

86. As to claim 7, Olson teaches a method including automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed [present] in the system [computer system][col. 5, lines 66 – 67, col. 6, lines 1 – 50].

87. As to claim 8, Olson teaches a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including querying [PRSNT # 1 – 4 signal level] at least one of the electronic devices [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4]; and in response to the querying [signal level of PRSNT # 1 – 4], receiving information [number of PCI devices present] from at least one of the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][ col. 5, lines 66 – 67, col. 6, lines 1 – 50].

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88. As to claim 9, Olson teaches a computer system and a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including reading at least portion of a memory [status register][col. 4, lines 66 – 67, col. 5, lines 1 – 5].

89. As to claim 10, Olson teaches a computer system and a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including reading at least portion of a memory [status register][col. 4, lines 66 – 67, col. 5, lines 1 – 5] also teaches a DIP switch [expansion slot connector mechanism inherently teaches a DIP switch for detecting presence of PCI device in slot].

90. As to claim 11, Olson discloses a computer system and method including ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed in the system [computer system] through a user interface [to get device information through the user interface is inherent to computer system].

91. As to claim 13, Olson discloses a computer system including the electronic device [PCI device in slot # 1] removably installed in an expansion slot [expansion slot #1, fig. 2].

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92. As to claim 14, Olson discloses a computer system including at least one of the zero or more other electronic devices [PCI devices in slot 2 – 4] removably installed in an expansion slot [expansion slot # 2 – 4, fig. 2].

93. As to claim 17, Olson teaches the information [number of device present and device capability] about the electronic device [PCI device in slot # 1] and the zero or more other electronic devices [PCI devices in slot # 2 – 4] comprises a number of the other electronic devices [number of devices] installed [present] in the system [col. 3, lines 22 – 63, fig. 2].

94. As to claim 20, Olson teaches a method including automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed [present] in the system [computer system][col. 5, lines 66 – 67, col. 6, lines 1 – 50].

95. As to claim 21, Olson teaches a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including querying [PRSNT # 1 – 4 signal level] at least one of the electronic devices [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4]; and in response to the querying [signal level of PRSNT # 1 – 4], receiving information [number of PCI devices present] from at least one of the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][ col. 5, lines 66 – 67, col. 6, lines 1 – 50].

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96. As to claim 22, Olson teaches a computer system and a method including including a memory [14, system memory, col. 1, lines 30 – 31] for storing [in status registers] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][col. 4, lines 66 – 67, col. 5, lines 1 – 5, fig. 1 – 2].

97. As to claim 23, Olson teaches a computer system and a method including including a memory [14, system memory, col. 1, lines 30 – 31] for storing [in status registers] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][col. 4, lines 66 – 67, col. 5, lines 1 – 5, fig. 1 – 2] also teaches a DIP switch [expansion slot connector mechanism inherently teaches a DIP switch for detecting presence of PCI device in slot]

98. As to claim 24, Olson diiscloses a computer system and method including ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed in the system [computer system] through a user interface [to get device information through the user interface is inherent to computer system].

99. As to claim 26, Olson discloses a computer system including the electronic device [PCI device in slot # 1] removably installed in an expansion slot [expansion slot #1, fig. 2].

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100. As to claim 27, Olson discloses a computer system including at least one of the zero or more other electronic devices [PCI devices in slot 2 – 4] removably installed in an expansion slot [expansion slot # 2 – 4, fig. 2].

101. As to claim 29, Olson teaches supplying a clock signal [PCI CLOCK] having the automatically selected clock frequency [33/66 MHz] to the first [PCI device in expansion slot #1] and second [PCI device in expansion slot #2] electronic devices respectively [PCI device in expansion slot #1, and 2 respectively] [col. fig.2].

102. As to claim 30, Olson teaches supplying a clock signals [PCI CLOCK signals] having the automatically selected clock frequency [33/66 MHz] to the first and second buses [expansion buses connected to slot #1, and slot #2] respectively [as shown in fig. 2].

103. As to claim 31, Olson teaches the information [number of device present and device capability] about the first and second electronic device [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in slot # 3 – 4] comprises a number of the other electronic devices [number of devices] installed [present] in the system [col. 3, lines 22 – 35, fig. 2].

104. As to claim 34, Olson teaches including automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information about the first and second electronic device [PCI device in slot #1, and 2] and the zero or more other electronic devices [PCI device in slot #3 – 4] installed [present] in the system [computer system][col. 5, lines 66 – 67, col. 6, lines 1 – 50].

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105. As to claim 35, Olson teaches including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including querying [PRSNT # 1 – 4 signal level] at least one of the electronic devices [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4]; and in response to the querying [signal level of PRSNT # 1 – 4], receiving information [number of PCI devices present] from at least one of the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][ col. 5, lines 66 – 67, col. 6, lines 1 – 50].

106. As to claim 36, Olson teaches a computer system and a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including reading at least portion of a memory [status register][col. 4, lines 66 – 67, col. 5, lines 1 – 5].

107. As to claim 37, Olson teaches a computer system and a method including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] including reading at least portion of a memory [status register][col. 4, lines 66 – 67, col. 5, lines 1 – 5] also teaches a DIP switch [expansion slot connector mechanism inherently teaches a DIP switch for detecting presence of PCI device in slot].

108. As to claim 38, Olson diiscloses a computer system and method including ascertaining [detecting or discovering the presence of device in number of slots] at least

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some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed in the system [computer system] through a user interface [to get device information through the user interface is inherent to computer system].

109. As to claim 40, Olson discloses a computer system including the electronic device [PCI device in slot # 1] removably installed in an expansion slot [expansion slot #1, fig. 2].

110. As to claim 41, Olson discloses a computer system including at least one of the zero or more other electronic devices [PCI devices in slot 2 – 4] removably installed in an expansion slot [expansion slot # 2 – 4, fig. 2].

111. As to claim 44, Olson teaches the information [number of device present and device capability] about the first and second electronic device [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in slot # 3 – 4] comprises a number of the other electronic devices [number of devices] installed [present] in the system [col. 3, lines 22 – 35, fig. 2].

112. As to claim 47, Olson teaches automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information about the first and second electronic device [PCI device in slot #1, and 2] and the zero or more other electronic devices [PCI device in slot #3 – 4] installed [present] in the system [computer system][col. 5, lines 66 – 67, col. 6, lines 1 – 50].

113. As to claim 48, Olson teaches including the automatically ascertaining [detecting or discovering the presence of device in number of slots] at least some of the

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information [number of PCI devices present] including querying [PRSNT # 1 – 4 signal level] at least one of the electronic devices [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4]; and in response to the querying [signal level of PRSNT # 1 – 4], receiving information [number of PCI devices present] from at least one of the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][ col. 5, lines 66 – 67, col. 6, lines 1 – 50].

114. As to claim 49, Olson teaches a computer system including a memory [14, system memory, col. 1, lines 30 – 31] for storing [in status registers] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][col. 4, lines 66 – 67, col. 5, lines 1 – 5, fig. 1 – 2].

115. As to claim 50, Olson teaches a computer system and a method including including a memory [14, system memory, col. 1, lines 30 – 31] for storing [in status registers] at least some of the information [number of PCI devices present] about the electronic device [PCI device in slot #1] and the zero or more other electronic devices [PCI device in slot # 2 – 4][col. 4, lines 66 – 67, col. 5, lines 1 – 5, fig. 1 – 2] also teaches a DIP switch [expansion slot connector mechanism inherently teaches a DIP switch for detecting presence of PCI device in slot]

116. As to claim 51, Olson diiscloses a computer system including ascertaining [detecting or discovering the presence of device in number of slots] at least some of the information [number of PCI devices present] about the electronic device [PCI device in

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slot #1] and the zero or more other electronic devices [PCI device in slot #2 – 4] installed in the system [computer system] through a user interface [to get device information through the user interface is inherent to computer system].

117. As to claim 53, Olson discloses a computer system including the electronic device [PCI device in slot # 1] removably installed in an expansion slot [expansion slot #1, fig. 2].

118. As to claim 54, Olson discloses a computer system including at least one of the zero or more other electronic devices [PCI devices in slot 2 – 4] removably installed in an expansion slot [expansion slot # 2 – 4, fig. 2].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

119. Claims 5, 12, 18, 25, 32, 39, 45, and 52, are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al. [hereinafter as Olson], US Patent 6,484,222 B1 as

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applied to claims 1 – 4, 7 – 11, 13 – 17, 21 – 24, 26 – 31, 34 – 38, 40 – 44, 47 – 51, and 53 – 54, above, and further in view of Dai, US Patent 6,714,890 B2.

120. As to claims 5, 12, 18, and 25, Olson discloses a computer system and a method of determining clock frequency [PCI bus clock frequency] for an electronic device [PCI device] installed in a system [expansion slot # 1] with zero or more other electronic devices [PCI devices in expansion slots # 2-4, fig. 2] the method comprising: automatically selecting a clock frequency [33/66 MHZ] for electronic device based at least on information [number of device present and device capability] about the electronic devices [PCI device] installed in a system [expansion slot # 1] and the zero or more other electronic devices [PCI devices in expansion slots # 2-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

However, Olson does not teach automatically selecting [scaling/changing] a clock frequency based on a thermal budget for the system or an amount of heat generated by [heat dissipation] electronic device.

Reinhardt teaches a computer system and method for scaling a voltage and frequency response to [based on] condition detection [information] when temperature of the electronic device is detected to have exceeded a thermal band [thermal budget, predetermined thermal threshold][col. 1, lines 7 – 10, col. 2, lines 32 – 40, col. 4, lines 12 – 67, col. 5, lines 1 – 53, col. 6, lines 17 – 48].

It would have been obvious to one of ordinary skill in the art, having the teachings of Olson and Reinhardt before him at the time of invention was made, to modify the

automatic clock selection and determining clock frequency based at least on information about the device installed as disclosed by Olson to include changing [scaling] the operating frequency based on the condition when temperature of the electronic device is detected to have exceeded a thermal band [thermal budget, predetermined thermal threshold] [predefined thermal threshold reached which indirectly representing heat dissipation ] as taught by Reinhardt, in order to obtain clock selection and control apparatus and method to reduce power consumption and thereby increase [enhance] the performance [abstract, col. 2, 5 – 9, 30 – 42].

One of ordinary skill in the art wanted to be motivated to scale operating frequency based on detection when the temperature has exceeded the thermal band [thermal budget] [by monitoring the temperature of the processor die through thermal dissipation results] reduces the temperature and reduces power consumption during idle time and thereby increase the performance [abstract, col. 2, 5 – 9, 30 – 42, col. 4, lines 21 – 63].

121. As to claims 32, 39, 45, and 52, Olson discloses a computer system and method of determining a clock frequency [PCI bus clock frequency] for a first [PCI device in expansion slot #1] and a second [PCI device in slot #2] electronic [PCI] device installed in a system [computer] with zero or more other electronic devices [PCI devices in expansion slots # 3-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53], the first electronic device being connected to a first bus [expansion bus connected to slot 70] and the second electronic device being connected to a second bus [expansion bus connected to slot 80][FIG. 2] including automatically selecting a clock

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frequency [33/66 MHZ] for both the first and second electronic devices [PCI devices in slot # 1 and 2] based at least on information [number of device present and device capability] about the first and second electronic devices [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in expansion slots # 3-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

However, Olson does not teach automatically selecting a clock frequency based on a thermal budget for the system or an amount of heat generated by [heat dissipation] electronic device.

Reinhardt teaches a computer system and method for scaling a voltage and frequency response to [based on] condition detection [information] when temperature of the electronic device is detected to have exceeded a thermal band [thermal budget, predetermined thermal threshold][col. 1, lines 7 – 10, col. 2, lines 32 – 40, col. 4, lines 12 – 67, col. 5, lines 1 – 53, col. 6, lines 17 – 48].

It would have been obvious to one of ordinary skill in the art, having the teachings of Olson and Reinhardt before him at the time of invention was made, to modify the automatic clock selection and determining clock frequency based at least on information about the device installed as disclosed by Olson to include changing [scaling] the operating frequency based on the condition when temperature of the electronic device is detected to have exceeded a thermal band [thermal budget, predetermined thermal threshold] [predefined thermal threshold reached which indirectly representing heat dissipation] as taught by Reinhardt, in order to obtain clock selection and control

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apparatus and method to reduce power consumption and thereby increase [enhance] the performance [abstract, col. 2, 5 – 9, 30 – 42].

One of ordinary skill in the art wanted to be motivated to scale operating frequency based on detection when the temperature has exceeded the thermal band [thermal budget] [by monitoring the temperature of the processor die through thermal dissipation results] reduces the temperature and reduces power consumption during idle time and thereby increase the performance [abstract, col. 2, 5 – 9, 30 – 42, col. 4, lines 21 – 63].

122. Claims 6, 19, 33, and 46, are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al. [hereinafter as Olson], US Patent 6,484,222 B1 as applied to claims 1 – 4, 7 – 11, 13 – 17, 21 – 24, 26 – 31, 34 – 38, 40 – 44, 47 – 51, and 53 - 54, above, and further in view of Furuichi et al. [hereinafter as Furuichi], US Patent 6,513,124 B1.

123. As to claims 6, and 19, Olson discloses a computer system and a method of determining clock frequency [PCI bus clock frequency] for an electronic device [PCI device] installed in a system [expansion slot # 1] with zero or more other electronic devices [PCI devices in expansion slots # 2-4, fig. 2] the method comprising: automatically selecting a clock frequency [33/66 MHZ] for electronic device based at least on information [number of device present and device capability] about the electronic devices [PCI device] installed in a system [expansion slot # 1] and the zero or more other electronic devices [PCI devices in expansion slots # 2-4] installed in the

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system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

However, Olson does not teach automatically selecting [scaling/changing] a clock frequency based on a power consumption budget for the system.

Furuichi teaches an apparatus and method for controlling [changing] operating speed [clock frequency] of an electronic device [processor CPU] in computer based on power consumption budget [by measuring a power consumption index [P] and determining if it is equal to or more than  $P_{\max}$  or equal to or less than  $P_{\min}$ ] [col. 8, lines 9 – 47, fig. 1, 4].

It would have been obvious to one of ordinary skill in the art, having the teachings of Olson and Furuichi before him at the time of invention was made, to modify the automatic clock selection and determining clock frequency based at least on information about the device installed as disclosed by Olson to include changing the operating frequency based on power consumption budget [by measuring a power consumption index [P] and determining if it is equal to or more than  $P_{\max}$  or equal to or less than  $P_{\min}$ ] [col. 8, lines 9 – 47] as taught by Furuichi, in order to obtain clock selection and control apparatus and method to reduce the energy index means more power saving and higher performance [less sacrificed performance] which leads to more efficient power management [col. 2, lines 62 – 67, col. 3, lines 1 – 2].

One of ordinary skill in the art wanted to be motivated to calculate a values of a performance and power consumption indexes and changing the operating speed [clock frequency] to reduce the energy index means more power saving and higher

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performance [less sacrificed performance] which leads to more efficient power management [col. 2, lines 62 – 67, col. 3, lines 1 – 2].

124. As to claims 33, and 46, Olson discloses a computer system and a method of determining a clock frequency [PCI bus clock frequency] for a first [PCI device in expansion slot #1] and a second [PCI device in slot #2] electronic [PCI] device installed in a system [computer] with zero or more other electronic devices [PCI devices in expansion slots # 3-4] in the system [computer system, fig. 2][col. 3, lines 22 – 26, 42 – 53], the first electronic device being connected to a first bus [expansion bus connected to slot 70] and the second electronic device being connected to a second bus [expansion bus connected to slot 80][FIG. 2] including automatically selecting a clock frequency [33/66 MHZ] for both the first and second electronic devices [PCI devices in slot # 1 and 2] based at least on information [number of device present and device capability] about the first and second electronic devices [PCI devices in slot # 1 and 2] and the zero or more other electronic devices [PCI devices in expansion slots # 3-4] installed in the system [computer system, fig. 2][col. 3, lines 22 – 35, 39 – 61, col. 4, lines 23 – 41, col. 5, lines 1 – 65, fig. 2 – 3].

However, Olson does not teach automatically selecting [scaling/changing] a clock frequency based on a power consumption budget for the system.

Furuichi teaches an apparatus and method for controlling [changing] operating speed [clock frequency] of an electronic device [processor CPU] in computer based on power consumption budget [by measuring a power consumption index [P] and

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determining if it is equal to or more than  $P_{\max}$  or equal to or less than  $P_{\min}$  [col. 8, lines 9 – 47, fig. 1, 4].

It would have been obvious to one of ordinary skill in the art, having the teachings of Olson and Furuichi before him at the time of invention was made, to modify the automatic clock selection and determining clock frequency based at least on information about the device installed as disclosed by Olson to include changing the operating frequency based on power consumption budget [by measuring a power consumption index  $[P]$  and determining if it is equal to or more than  $P_{\max}$  or equal to or less than  $P_{\min}$  [col. 8, lines 9 – 47] as taught by Furuichi, in order to obtain clock selection and control apparatus and method to reduce the energy index means more power saving and higher performance [less sacrificed performance] which leads to more efficient power management [col. 2, lines 62 – 67, col. 3, lines 1 – 2].

One of ordinary skill in the art wanted to be motivated to calculate a values of a performance and power consumption indexes and changing the operating speed [clock frequency] to reduce the energy index means more power saving and higher performance [less sacrificed performance] which leads to more efficient power management [col. 2, lines 62 – 67, col. 3, lines 1 – 2].

125. **Examiner's note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures

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may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

126. **Prior Art not relied upon:** Please refer to the references listed in attached PTO-892, which, are not relied upon for claim rejection since these references are relevant to the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin C. Patel whose telephone number is 571-272-3675. The examiner can normally be reached on 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Nitin C. Patel* 8/1/06  
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